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CARDIAC FUNCTION AND HEART FAILURE

LONG-TERM OUTCOME AFTER BETA-1 ADRENORECEPTOR AUTOANTIBODY REMOVAL IN HEART TRANSPLANT CANDIDATES WITH DILATED CARDIOMYOPATHY

ACC Oral Contributions
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Session Title: Cardiomyopathy: Bench to Bedside
Abstract Category: 22. Cardiomyopathies/Myocarditis/Pericardial Disease
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Background: Prolongation of waiting-times for heart transplantation (HTx) increases the need for new therapies for heart failure. In short-term follow-up studies, immunoadsorbtion (IA) showed promising results in patients with dilated cardiomyopathy (DCM) associated with β1-adrenoreceptor autoantibodies (β1-AABs). We assessed the responsiveness to IA, its long-term therapeutic efficacy and the impact of selectivity of β1-AAB removal on IA results in HTx candidates with DCM.
Methods: Cardiac function and patient survival without HTx or ventricular assist devices (VADs) were evaluated in β1-AAB positive HTx candidates with DCM who underwent IA between 1995 − 2005 (follow-up: 5 − 14.5 years). We also looked for differences in efficacy between unselective (unspecific IA) and selective (specific IA) β1-AAB removal and for differences in IA results between patients with high and low β1-AAB levels.

Results: In 131 patients with high β1-AAB levels (≥ 3LU), unspecific and specific IA showed the same high efficiency in β1-AAB removal. LVEF and NYHA class improved ($p < 0.01$) after both, but there were no differences in post-IA LVEF or NYHA class improvement between patients with specific and unspecific IA. Kaplan-Meier estimates revealed probabilities for 5 year HTx/VAD-free survival of 83.1 ± 8.6% for unspecific and 91.3 ± 5.9% for specific IA. The prevalence of responders to specific and unspecific IA was similar (78.3% and 79.6%, respectively). Post-IA β1-AABs reappearance coincided with cardiac worsening. There were no differences in cardiac function, patient outcome and adverse side effects between patients who underwent unspecific IA using peptides or native proteins as ligands. In comparison to patients with high β1-AAB levels, a smaller (n = 19) DCM patient "control group" with low β1-AAB levels (< 3LU) showed little benefit from IA.

Conclusions: Removal of ß1-AABs by specific or unspecific IA improves cardiac function and allows long-term cardiac stability in end-stage DCM which can spare many patients from HTx or will delay HTx listing for many years. Our data suggest that in β1-AAB positive DCM patients the benefits of both specific and unspecific IA are related to the removal of these antibodies.